



Lake Michigan Fact Sheet

LAKE MICHIGAN AREAS OF CONCERN

Areas of Concern

Lake Michigan has 10 Areas of Concern (AOC) which were designated by the International Joint Commission. An AOC is a location where use of rivers, bays, or lakes is limited by pollution. Such areas might have high pollution levels that prevent people from swimming or eating local fish. In addition, the pollution levels may be harming fish, wildlife, and wildlife habitat.

Citizens and representatives from business and local, State, and Federal governments have joined together in identifying pollution sources and implementing solutions for each AOC. Multiple activities are underway to address each AOC's environmental concerns. For more information about actions and successes, points of contact are listed for each AOC in the brief descriptions that follow.



Manistique River

Location

The Manistique River flows southwest through Schoolcraft County in Michigan's central Upper Peninsula, discharging into the Lake at Manistique. The AOC is the last 1.7 miles of the river, from the dam to the mouth of the harbor at Lake Michigan.

Brief Description

The primary environmental concern is contamination of sediments and fish by polychlorinated biphenyls (PCBs). Oils and heavy metals also contaminate the AOC and combined sewer overflows can be a problem. A combined sewer overflow is the discharge of both sewage and stormwater that have not been treated.

Ongoing dredging of PCB-contaminated sediments will eventually lead to restoring most of the uses in the AOC and will also lead to a reduction of PCB contamination to Lake Michigan.

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Lower Menominee River

Location

The Menominee River forms the boundary between the northeast corner of Wisconsin and the southern tip of the Upper Peninsula of Michigan. In Wisconsin, this river is sometimes called the Brule. It flows between the cities of Menominee, Michigan and Marinette, Wisconsin, before emptying into Green Bay on Lake Michigan. The AOC includes the lower 3 miles of the river from the Upper Scott Paper Company Dam to the river's mouth and approximately 3 miles north and south of the mouth along the adjacent shoreline of Green Bay.

Brief Description

The Ansul Chemical Company produced arsenic-based herbicides from 1957 to 1977. Wastes, including arsenic salts, were stored next to or dumped into the river causing the largest remaining impairments in the AOC. Other pollutants such as mercury, PCBs, and oil and grease have also contributed to environmental problems. Sources of contamination include coal and salt piles, a municipal landfill, industrial discharges, municipal wastewater treatment plants, and combined sewer overflows. The ecosystem will be restored with the successful implementation of the cleanup agreement between EPA and Ansul under the Resource Conservation and Recovery Act (RCRA).

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Lower Green Bay and Fox River

Location

The AOC consists of the lower 7 miles of the Fox River and about 20 square miles of southern Green Bay. The drainage area encompasses portions of 18 counties in Wisconsin and 40 watersheds of the Upper Fox River, Wolf River, and the Fox River, including Lake Winnebago, and its pool lakes. A watershed is an area of land from which water drains to a stream, lake, or wetland.

Brief Description

If uses are to be restored, the amount of contaminated sediments and nutrients must be significantly reduced, wetland habitat must be better protected and restored, and PCBs must be eliminated or reduced to a level where no negative effects to the ecosystem can be detected. In addition, the introduction of exotic species must be better controlled. Exotic species are not native to Lake Michigan and have been intentionally introduced or have infiltrated the system. Some exotic species have a negative effect on native species.

Since 1988, 38 of the 120 recommended remedial actions have been implemented and another 57 have been initiated.

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Sheboygan River

Location

The lower Sheboygan River downstream from the Sheboygan Falls Dam, including the entire harbor and near-shore waters of Lake Michigan, comprises the AOC. The AOC serves as a sink for pollutants carried from three rivers: Sheboygan, Mullet, and Onion.

Brief Description

EPA designated the Kohler Company landfill, located approximately 300 feet from the river, as a Superfund site in 1984. A year later, 14 miles of the river and the harbor were named as another Superfund site. Superfund is a federal priority program which seeks the cleanup of the most polluted hazardous waste sites in the country.

While several contaminants contribute to the use impairments, PCBs are the overriding pollutant of concern in the contaminated sediment throughout the system. The environmental problems will continue until appropriate corrective actions ordered through Superfund are implemented.

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Location

Included in the AOC are: the outer harbor and near shore areas of Lake Michigan, the lower 3.1 miles of the Milwaukee River, the lower 3 miles of the Menominee River, and the lower 2.5 miles of the Kinnickinnic River.

Brief Description

The Milwaukee River ecosystem is affected by pollution sources associated with land use from the entire Milwaukee River watershed. As in all major industrialized urban areas, the ecosystem has been impacted by urban runoff and development. In Milwaukee, upstream sources of PCBs have contaminated sediment and agricultural runoff contributes nutrients and sediment to the system. Sediment remediation projects have begun in Cedar Creek and non-point priority watershed projects have been implemented. Combined sewer overflows have been greatly diminished. They used to occur, on average, 50 times per year and since 1994, now occur fewer than 2 times per year.

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Waukegan

Location

The Waukegan AOC is located in Lake County, Illinois, on the west shore of Lake Michigan. There is also an Expanded Study Area (ESA) bounded by: the Dead River on the north; a bluff line which parallels Sheridan Road on the west; the southern boundary of the former U.S. Steel Property on the south; and the near-shore waters of Lake Michigan on the east. Waukegan Harbor consists of approximately 37 acres of industrial, commercial, municipal, and open/vacant lands. The watershed of the Waukegan ESA contains the Waukegan River, the North Ditch, and other near-shore areas which drain to Lake Michigan.

Brief Description

Three Superfund sites are located within the ESA. Major causes of environmental problems are contaminated sediments and soils in and around Waukegan Harbor. Major concerns voiced by citizens include fish consumption advisories and delays in harbor dredging.

Four major remedial actions have been completed that will significantly reduce the quantity of contaminants in Waukegan Harbor and the near-shore area. One site alone resulted in the removal of approximately 1 million pounds of PCBs. The local Citizens Advisory Group has been instrumental in obtaining cooperation from local responsible parties to pursue remedial investigations in addition to many other environmental activities.

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Grand Calumet River/Indiana Harbor Ship Canal

Location

The Grand Calumet River, originating in the east end of Gary, Indiana, flows 13 miles through the heavily industrialized cities of Gary, East Chicago, and Hammond. The AOC includes Lake County, Indiana, north of Interstate 80/94 and includes the east branch of the river, a segment of the west branch, and the Indiana Harbor and Ship Canal.

Brief Description

The AOC is heavily industrialized, including steel mills, oil refineries, chemical plants, and many other industrial operations. In contrast to the presence of heavy industry, the AOC also contains globally rare dune and swale habitat that supports a multitude of native plant species. The majority of the river's flow drains into Lake Michigan via the Indiana Harbor and Ship Canal, sending about 1 billion gallons of water into the lake per day. Of the river's flow, 90 percent originates as municipal and industrial waste waters, cooling and process water, storm water overflows, and combined sewer overflows. Heavy industrialization of the AOC has resulted in widespread contamination of the soil, sediments and ground water by hazardous substances and petroleum through accidental spills and releases. Between 5 and 10 million cubic yards of contaminated sediments cover the bottom of the Grand Calumet River and the Indiana Harbor Ship Canal, of which an estimated 150,000 cubic yards enter Lake Michigan annually. Millions of gallons of petroleum float on the ground water, and pose a threat where ground water meets surface water. Hundreds of hazardous waste sites require cleanup, including seven Superfund sites and numerous leaking underground storage tanks.

There are a host of activities underway where local, state and federal agencies, industry, and citizens are working together in formulating and implementing solutions to these problems.

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The Kalamazoo River is located in the southwest portion of Michigan's Lower Peninsula. The river flows in a westerly

direction and discharges into Lake Michigan near the Town of Saugatuck. The upstream boundary of the AOC is Morrow Dam, which forms Morrow Pond in Kalamazoo. The AOC extends downstream to Lake Michigan, a distance of approximately 80 miles.

Brief Description

The Kalamazoo River has been identified as an AOC due to historic releases of PCBs from deinking operations at local paper mills. These PCBs have accumulated in sediment and fish. Source areas for the PCB contamination have been identified along the mainstream from Calkins Dam to the City of Kalamazoo and Portage Creek in the City of Kalamazoo. The upstream sources of PCBs are collectively referred to as the Allied Paper, Inc./ Portage Creek/Kalamazoo River site. The area became a Superfund site in August 1990.

Habitat loss due to sediment contamination, sedimentation, and local developmental pressures is a concern as is fish contamination. In addition, nesting failure of bald eagles within the AOC suggests reproductive impairments potentially linked to PCB sediment contamination. Studies of effects of PCB-contaminated sediments on biota in the Kalamazoo River were released in Summer 1996. Significant effects were found in many levels of the ecosystem throughout the AOC. These studies are one more link in the chain of events that will lead to remediation of this Superfund site and ultimately reduce PCB loads to Lake Michigan. The Kalamazoo River is the largest source of PCBs to Lake Michigan from Michigan tributaries.

Two active non-point source pollution control projects in tributaries to the Kalamazoo River, the Little Rabbit River and Davis Creek, are expected to reduce loading of soil and certain contaminants to the Kalamazoo River and to Lake Michigan.

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Location

Muskegon Lake is a 4,149-acre inland coastal lake located at the mouth of the Muskegon River in Muskegon County, Michigan along the east shoreline of Lake Michigan.

Brief Description

Muskegon Lake was originally identified as an AOC because, prior to 1973, it received direct discharges of industrial and municipal wastewater, urban runoff, and combined sewer overflows. These discharges reduced water and habitat quality in Muskegon Lake and its tributaries. Despite water quality improvements over the years, Muskegon Lake has

areas that are still seriously impaired by polluted ground-water sites flowing into the Lake, contaminated sediments, insufficient dissolved oxygen, and degraded fish and wildlife habitat.

Increased treatment of industrial and municipal waste over the last 20 years has reduced the amount of pollutants discharged in the AOC. Local problem spots such as Ruddiman Creek, a tributary to Muskegon Lake, continue to be assessed and are the subject of educational and remedial action efforts by the community. The Muskegon County Soil Conservation District has initiated many local community-based educational programs to reduce non-point source pollution to Muskegon Lake and to Lake Michigan.

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White Lake is a 2,570-acre inland coastal lake at the mouth of the White River, along the east shoreline of Lake Michigan. The AOC includes White Lake proper and a 0.25-mile zone around Lake Michigan.

Brief Description

White Lake faces problems from contaminated ground water, urban runoff, combined sewer overflows, contaminated sediments, pollution from the atmosphere, and historical municipal and industrial discharges.

Assessment continues for sediments in the vicinity of the former leather tannery in Whitehall. The EPA research vessel "Mudpuppy" collected core samples in 1994 and 1996 to determine the extent of heavy metal contamination in White Lake sediments.

Pumping and treating of ground water contaminated with organic solvents from the former chemical plant north of White Lake has significantly reduced loadings of contaminants to White Lake and Lake Michigan.

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